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AUTHOR Gibson, Gail M.; Herbert, Michael A.; Sebastian, Joan P.; Mayhew, John C.

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ABSTRACT

As an extension of a graduate program at the University of Utah designed to prepare teachers to work more effectively with American Indian students, a multimedia distance education course entitled "Culture and School Success: Teaching American Indians," was developed. Two major outcomes were identified: to educate a minimum of 350 educational professionals per year in their home communities in best practice interventions for American Indian children and youth in Utah; and to develop and test an innovative technology enhanced model for curriculum development and distance delivery which included cost effectiveness, longevity, and flexibility in its use. To assist in the design process, an instructional designer facilitated a series of large group brainstorming sessions utilizing a systematic approach to the process. Four stages or levels of design were addressed: course parameters, content, scaffolding, and media element design. Themes developed during this process that were used to guide the class design included historical context, self-reflection, student-designed solutions, and evaluation. The end result was an outline listing the elements to be covered in each session. The process will continue with producing the video elements, developing print materials, researching enrichment activities, training facilitators, exploring possible World Wide Web interactions, and designing student activities/projects. (AEF)

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By:

Gail M. Gibson
Michael A. Herbert
Joan P. Sebastian
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Designing a Collaborative Multimedia Course: Culture and School Success

Gail M. Gibson
University of Utah

Joan P. Sebastian
University of Utah

Michael A. Herbert
University of Utah

John C. Mayhew
University of Utah

The Final Report of the Indian Nations At Risk Task Force states that, "Our schools have failed to nurture the intellectual development and academic performance of many Native children, as is evident from their high dropout rates and negative attitudes towards school" (U.S. Department of Education 1991, p. 1). Data gathered as a result of this report identified multiple issues regarding the training of teachers, cultural differences in the non-verbal regulation of classroom interaction, culturally appropriate curriculum, and psychoeducational assessment measures and practices (Baer & Bennett, 1987; Gundersen, 1986; Littlebear, 1993; McShane, 1983; Wald, 1996; Wells, 1991). In response to this report and the growing concern in Utah for the educational needs of American Indian students, the Department of Special Education at the University of Utah developed, with the assistance of federal grants, a graduate program designed to prepare teachers to work more effectively with these students.

The graduate program, with a specialization in teaching American Indian students with disabilities, included four graduate level courses offered during summer quarter sessions on the campus of University of Utah. Personnel from Special Education, Educational Studies, Educational Psychology, and Ethnic Studies within the Graduate School of Education at the University of Utah collaborated on conceptualizing the model, defining the components, and operationalizing the priorities into a unified graduate program of study. Faculty involved represented several minority groups, including individuals from two American Indian nations. This collaboration from different educational and cultural perspectives provided essential input and relevancy to the project. As an extension of this project, developers decided to offer a portion of the specialization content via distance education in an effort to reach educators working with Indian students throughout the state. The purpose of this paper is to describe the process of designing a multimedia distance education course entitled Culture and School Success: Teaching American Indians.

Building Support

Project developers applied for and received funding for a curriculum development effort sponsored by the Utah System of Higher Education under a Technology and Distance Education Initiative. Two major outcomes for this project were identified: (1) to educate a minimum of 350 educational professionals per year in their home communities in "best practice interventions" for American Indian children and youth in Utah, and (2) to develop and test an innovative technology enhanced model for curriculum development and distance delivery which included cost effectiveness, longevity, and flexibility in its use.

The course to be developed "Culture and School Success: Teaching American Indians" was conceptualized as a graduate level course that would be available in both pre-service and in-service contexts to educators in both urban and rural/remote parts of Utah. The course content was distilled from the four existing federal grant funded classes that were taught previously by four professors and offered only on campus. The challenge of developing such an inclusive and flexible course to address the needs of American Indian children and youth at risk in Utah was formidable. The circle was chosen as the culturally relevant metaphor for the multimedia course. In many American Indian cultures, the circle represents the balance of life, as all things important to maintaining life fit somewhere on the circle. By touching one part of the circle, all parts are included. It was found that the metaphor used to address the issues of the course also applied to the development process in creating the distance education course. (Herbert, Mayhew, Sebastian, in press).

In the initial proposal it was clear that the project would need extensive technical assistance. Therefore,

support from an instructional design team and resources for multimedia development were built into the proposal. The four faculty members who serve as content specialists were provided with either released time from other course assignments or stipend support. A graduate assistant was selected to help obtain and organize course support materials. Two additional faculty members, also responsible for distance teacher education in the department, completed the project development team.

Together, there are ten individuals with very different backgrounds and experiences directly involved in the development and production of the course. Each person has a different role, responsibility and expertise to contribute to the process. Roles include: distant education specialist, syllabus designer, video producer, world wide web consultant, copyright research specialist and content specialists in the fields of Indian education, special education, educational psychology, and ethnic studies. Coordinating the activities of the design team, particularly at the beginning of the project, became one of the greatest challenges of this project.

Course Design Theory

Multimedia development is an interdisciplinary effort focused around producing the most effective instructional episode for the learner. Media is defined as a means for effecting, conveying or communicating something. By that definition anything used to effect a learners instructional experience is a medium. A multimedia course uses several different types of media to communicate the instructional message.

The various media examples shown in the model (Figure 1) have distinctive advantages and disadvantages in the instructional episode because each appeals to different learning styles. By combining different media we reach a wider variety of learners creating a rich blend of sensory perceptions. The decision on which medium to use where comes from answering the question, "which method makes it most clear what is to be learned, and which does it most interestingly and most economically of time, space, and money"(MacMillan, 1930, p.338)

To effectively decide which medium should convey what message, developers must first start by defining the message. If the instruction only consists of one medium, for example the professor communicating to the students, then chances are the design process for that course could be relatively simple and direct. But when the design involves a team of developers the process becomes more complex.

Participants who come to the multimedia development process come from different cultures, and therefore have different world-views and perspectives in terms of the design, development, production and implementation process. By involving development stakeholders in the design process needs, frustrations and alternative solutions can be addressed. (Carr, 1997). The team needs to come together to develop a shared language to be able to communicate with one another about all aspects of the project. "The design effort must be interdisciplinary in nature. No one person is likely to be a specialist in all media and content areas to be covered in the process of developing a successful course"(DeBloois 1983, cited in Romiszowski, 1986). In order to successfully communicate and produce what you set out to produce, it is essential that the development have a shared vision of the finished product.

Instructional Multimedia Team Design Model

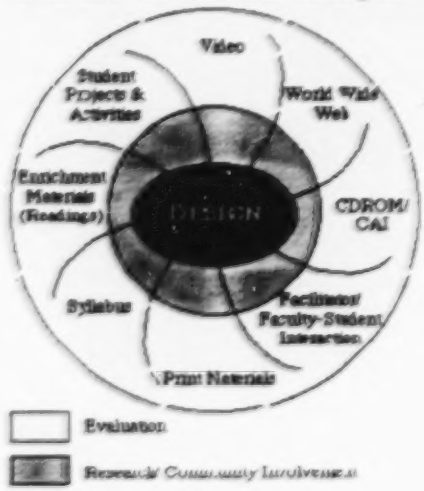

Figure 1: Collaborative Design Model

Unfortunately, many content experts are resistant to this idea, and for good reason. The faculty culture places a high emphasis on ownership for intellectual property, student credit hours and revenues from the completed course. These issues must be answered before the project begins. Regardless of the political landscape for development, the most important pre-requisite for faculty involvement must be the motivation to create an effective instructional environment for the learner. With this as a common denominator among all team members, all other logistical problems are more likely to be solved through effective communication.

The tool for communication in this production process is the instructional design; therefore, it should also be developed collaboratively. Team members' experiences, revelations, and enthusiasm for the project need to mix together through time in order to find solutions to instructional challenges. The successful process allows for that design time. It provides for breathing moments, reflection, and review. It should be a flexible process that always keeps as its focus the ultimate beneficiary, the learner.

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However, this process needs to be examined within the context of production timelines, grant funding periods, and academic calendars. Instruction can only benefit the learner if it is implemented; therefore, the team does have to accomplish stages of design, development, and production in a timely manner. To insure that no step is left undone, instructional design systematizes the process but it should not take the creativity and flexibility away from the design team. The process should give the team freedom for creativity by taking away the stresses that comes from last minute production issues.

To assist the design process an instructional designer facilitated a series of large group brainstorming sessions. This person utilized a systematic approach to the design process (Gustafson, Branch, 1997; Romiszowski, 1986) to insure all aspects of the project were thoroughly thought out before the production process could begin. Four stages or levels of design were addressed in designing the course.

Level 1 - Course Parameters

There are potentially as many solutions to a given problem as participants in the design, especially if there is not a clearly defined direction from the start. The first stage of development outlines all of the influencing factors in the course as well as the overall course goal. This helps give the team a common vocabulary to describe the problem and the solutions:

- Who will be taking this course?
- Where will it be taught?
- What technical limitations will the students have?
- Can the material developed for this course be used in any other ways? If so, what ways?
- Why are we offering this course?
- In what specific way will this course meet the challenge?
- How much money do we have to work with?
- When will the course be implemented?

This kind of analysis helps in making the tough decisions of what to include and what to leave out. Many of the issues discussed at this stage are often overlooked because team members assume everyone is starting from the same understanding of the project. However, with such a diverse group of people it is risky to make such assumptions. What may seem trivial now could become a major production problem down the road.

Level 2 -Content

This stage outlines the knowledge, skills and attitudes needed by the learners in order to achieve the overall goal. This includes the assumptions the faculty has about the learners' pre-requisite knowledge and attitudes. The ultimate goal at this level is to define the knowledge gaps between where the students are now and where they need to be after instruction. The definition is stated in the form of learner outcomes. Taken as a whole these outcomes should address all aspects of the ultimate goal of the course.

Level 3- Scaffolding

At this point the team strategizes the best way to meet the learner outcomes defined at level 2. The goal is to chunk the concepts in a way that builds a scaffold of superordinate and subordinate concepts linking prior knowledge to new knowledge. (Peters ,1996; Pressley, McCormick, 1995) Then the team needs to decide what is the most effective way to achieve those outcomes by deciding which medium will best address the concept while keeping the learner engaged and motivated in the process. This is done by reviewing the strengths and weaknesses of the media choices.

Another factor influencing media selection is the possibility of re-purposing the developed media for other projects. Production costs can be expensive. If a product can be used in different ways, the impact of the product is increased and the relative production cost is more efficient. By exploring other possible uses at this early stage, copyright clearances and agreements can be obtained.

Level 4 - Media Element Design

Once the team has developed a more specific list of its media production needs, it becomes easier to determine what already exists and what needs to be produced. Complete segments may already exist thus saving valuable production time and money. This production outline also facilitates more involvement from the community in finding resources for the production. At this stage the team sets realistic expectations about production time line and costs. The team also identifies subject matter experts for each produced element and assigns those elements to a faculty member who will serve as the production team's contact point. However, it is important for one faculty member to be the point person or project leader as faculty is more likely to accept direction from an another faculty member.

Course Design Practice

While the process can be viewed in stages it is by no means linear. With a diverse team, it is important to take a more iterative approach to the process, allowing the team to construct and deconstruct the design. In developing "Culture and School Success", the faculty team met first without the rest of the design team to flesh out the content areas that needed to be addressed within the course. The request for proposal process helped to define many of the issues addressed at level one.

When the design team met, the instructional design facilitator took each of the chunks of content brainstormed by the faculty and worked with the entire team to develop the knowledge, skills, attitudes, pre-requisite knowledge

and assumptions about the learners. From this point the team arrived at the outcomes for the course.

The course content chunks were also pulled into a sequence by the team. In order to illustrate the se-quences, lists were put up on walls to help the group visualize the structure of the course. As outcomes were developed, the sequence was reorganized in a manner that best met the scaffolding needs of the instruction. This scaffolding had to fit within the confines of the University imposed semester system, 15 two-hour sessions.

Within each session, the team decided to mix the media based on which medium would best communicate the desired message to the learner. The team wanted to develop an interactive structure that presented a concept or event via video and then utilize break out activities to engage the learner. The purpose of break out activities is to allow the learner to create meaningful concrete experiences for him or herself about the abstract concept covered in the video module. This design follows the "Professor Plus" model extensively used in the rural, distance education program of the Department of Special Education at the University of Utah. (Sebastian, Egan, Welch, &Page, 1996). Enrichment activities, readings and other outside the class events are designed to reinforce the instruction.

Themes developed during this process transcend the individual outcomes. These themes were used in each session to guide the class design. The themes include:

- Historical Context - to set the information in a framework and to call attention to the purpose of the session.
- Self-reflection -to personalize the material, bringing it into the students lives to increase relevancy.
- Student designed solutions - to put a positive slant on the material, helping the students build confidence in developing class based solutions.
- Evaluation - to provide opportunities to track student performance and reward successful achievement.

These themes also have the added benefit of following the ARCS model of attention, relevance, confidence and satisfaction, a method developed by John Keller for improving the motivational appeal of instructional materials (Keller, 1987).

The design was developed over a period of two months for a total of eight all day meetings. Because of outside commitments, not all of the design team participated in each meeting. This meant that throughout the process the team would go back and evaluate what happened at the last session, deconstructing and reconstructing the work. This was especially true when the team started developing the design for individual class sessions. Often members of the team would want to go back to review the content or to the learner analysis when starting a new session design. It was sometimes difficult for the faculty to let go of a specific content area to move on in the course. By keeping the work done to date visible to the team via white boards and paper post-ups, the faculty could be reminded of content already covered which helped to keep the team on track.

The end result was an outline (Table 1) that lists the elements to be covered in each session. Each element includes the amount of time allowed for the element, the presentation style, and the content to be covered, and which faculty members will serve as the subject matter expert for that element.

Table 1.
Example of one class session design

Session 4- Culture: effects in the classroom

Purpose:

Develop strategies to accommodate different communication and cultural styles in the classroom.

Outline:

RT	Presentation Style	Content	Faculty Contact
10:00	Facilitator	Welcome, review	Michael
10:00	Video/ case study	typical class session/ Monument Valley	Michael
10:00	Facilitated Break Out	Analysis	Michael
5:00	Video/ Role play	Communication non-ex.	Nola
10:00	Breakout	Identify what didn't work	Nola
5:00	Video/ Role play	Example	Nola
5:00	Break out	Discuss, set up next video	Nola, Jack
10:00	Video/Role play	Child rearing compare & contrast Indian and Anglo	Jack
15:00	Breakout	Small group, discussion: impact on class	Jack
10:00	Video/ case study	Review typical class session Monument Valley w/teacher interviews	Michael
10:00	Breakout/ Action Plan	Structure class to meet dif. com. and cultural styles	Michael
10:00	Facilitator	Wrap/ Set up next week	Michael

Total instruction time: 110 minutes

The next step

This account only describes phase one of the long involved process of multimedia course design, but arguably it is the most important step. From here the

various development teams will produce the video elements, develop the print materials, research the enrichment activities, train the facilitators, explore possible world wide web interactions, and design the student activities and projects.

It is at this point that the design team took advantage of the vast community resources available. Given the fact that the course being developed addresses the needs of an under-represented segment of the community it was seen as particularly important to solicit community involvement. An advisory board made up of leaders in the field of American Indian education, school district personnel, families, and tribal representatives was identified to provide additional assistance with the course content and help in the identification of resources. The design team felt very strongly that regular interaction with the advisory board would also be important for the quality and integrity of the course. Because the needs and expectations of the project have been articulated through the design process, the team has been able to solicit input on the specific research needs from this advisory board.

Lessons Learned

There are several lessons the team either brought to the process or picked up along the way. These include:

- Complete the design process before you start the production process.
- Take advantage of the community and culture around you as information resources.
- Formatively and summatively evaluate the project based on the design.
- Look for possible re-purposing opportunities before production starts.
- Be flexible.
- Don't assume anything.
- Provide food at group meeting sessions. (If you feed them, they will come.)
- Faculty who are intrinsically motivated to develop a more effective instructional product will more likely to stick with the entire development process.

The goal of "Culture and School Success" is to promote cultural pluralism in the classroom. Multimedia course development also merges vastly different cultures in an interdependent process that crosses several disciplines. Our final lessons, therefore, have been adapted from the outcomes of the course:

- Celebrate the diversity that comes from different fields of expertise.
- Respect all members of the development team.
- Allow yourself to think outside the box when it comes to changing the way you approach course development.
- Believe and trust in yourself and in your teammates.
- Above all, approach the process from the perspective of what's best for the learner not the development team.

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Gail M. Gibson, M. Ed. is the Director of KUED/Media Solutions at the University of Utah, Eccles Broadcast Center, 101 Wasatch Blvd., Salt Lake City, Utah 84112. Voice, office 801-581-3032

Joan P. Sebastian, Ed.D. is an Assistant Professor in Special Education Department, at the University of Utah, and the Principal Investigator of the Culture and School Success Project, Milton Bennion Hall, Salt Lake City, UT 84112, Voice, phone 801-581-8442

Michael Herbert is the Co-Project Director for the M.Ed. specialization in Teaching American Indians with disabilities at the University of Utah. Milton Bennion Hall, Salt Lake City, UT 84112, Voice, phone 801-585-5616

John Mayhew is the Co-Project Director of the Culture and School Success project at the University of Utah, Milton Bennion Hall, Salt Lake City, UT 84112, Voice, phone 801-581-6985